

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-100372

(43)Date of publication of application : 12.04.1994

(51)Int.Cl.

C04B 35/58
B28B 1/26

(21)Application number : 04-276770

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(22)Date of filing : 22.09.1992

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(54) CAST-FORMING OF SILICON NITRIDE POWDER

(57)Abstract:

PURPOSE: To provide a process for the cast-forming of a silicon nitride powder such as silicon nitride and Sialon.

CONSTITUTION: Silicon nitride powder coated with a water-resistant polyamide resin is dispersed in water and the obtained slurry is subjected to cast-forming. The coating with the polyamide resin can be carried out by coating the surface of the silicon nitride powder particle with a dibasic acid or its derivative, dispersing the coated particles in a solution of a diamine or a diamine derivative and polymerizing the components. The surface-oxidation of the silicon nitride powder caused by the mixing of the powder with water in the preparation of a cast-forming slurry can be prevented even by using water as the dispersion medium of the cast-forming slurry and, accordingly, a sintered silicon nitride having excellent mechanical strength can be produced without deteriorating the intrinsic characteristic properties of the silicon nitride.

LEGAL STATUS

[Date of request for examination]

22.07.1999

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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